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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/661,768	09/15/2003	Ramji Srinivasan	005242.000120	7275

22907 7590 01/17/2007  
BANNER & WITCOFF  
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SUITE 1100  
WASHINGTON, DC 20001

EXAMINER

PEZZUTO, HELEN LEE

ART UNIT PAPER NUMBER

1713

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/17/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/661,768

Applicant(s)

SRINIVASAN ET AL.

Examiner

Helen L. Pezzuto

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 October 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,3,5-12,20-29 and 32-35 is/are pending in the application.
- 4a) Of the above claim(s) 1,3,5-12 and 20-26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 27-29, 32-35 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Amendment***

Applicant's amendment to claims 20-23, and 26-27 filed in the response on 10/17/06 is acknowledged. Currently, claims 27-29, and 32-35 are under consideration in this application.

### ***Election/Restrictions***

1. . Election was made traverse in the reply filed on 5/13/06.
2. This application contains claims 1, 3, 5-12, and 20-26 drawn to an invention nonelected **without** traverse in the reply filed on 5/13/06. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 27-29, and 32-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pourahmady et al. (US-658).

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US 5,498,658 to Pourahmady et al. discloses a formaldehyde-free binder composition comprising a self-curing interpolymer. Prior art interpolymer is derived from 40-30 wt% of at least one functional monomer, 4-40 wt% of an unsaturated dicarboxylic acid monomer, 1-60 wt% of (meth)acrylonitrile, and up to 80 wt% of one or more hydrophobic monomer (col. 2, lines 29 to col. 3, line 51). Suitable functional monomer includes hydroxyalkyl (meth)acrylate). Prior art teaches conventional polymerization methods including the instant solution polymerization using polar solvents (i.e. water) (col. 3, line 52-55). Prior art exemplified equal parts of itaconic acid and hydroxypropyl acrylate (or hydroxyethyl acrylate), styrene, n-butyl acrylate, ethyl acrylate, and 3-mercaptopropionic acid within the scope of the instant claims (col. 6-7, Examples 2 and 3, Tables 2 and 3, other working examples). The instant product by process claims are rejected over prior art product which is taught to have -COOH:-OH ratio within the claimed range, though formed from a emulsion polymerization process. Furthermore, prior art interpolymer is a self-curing /self-crosslink product because of the presence of the functional groups in the respective monomers (i.e. the nucleophilic group and the dicarboxylic acid moieties). While the reference does not expressively exemplify the inclusion of an external crosslinking agent as expressed in

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claim 35, it does, however, discloses the inclusion of conventional additives such as curing agents in the latex composition (col. 4, line 65 to col. 5, line 5). Accordingly, it would have been obvious to one skill in the art to incorporate an external crosslinker/curing agent, motivated by the reasonable expectation of success.

5. Claims 27-29, and 32-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reck et al. (US-464) for the reasons of record.

US 6,114,464 to Reck et al. discloses an aqueous formaldehyde-free binder composition, comprising an amine compound (1) and an addition polymer (2). Prior art addition polymer (2) comprises 5-100 wt% of recurring units derived from at least one monoethylenically or diethylenically unsaturated acid monomer (col. 14, line 61 to col. 15, line 18), and up to 95 wt% of at least one further co-monomer (col. 15, lines 19-23). Suitable comonomers are taught within the scope of anionic, cationic and hydrophobic monomers (col. 15, line 24 to col. 16, line 36). Hydroxyalkyl (meth)acrylates, vinyl acetate, and other hydroxyl group-containing monomers, which fall within the scope of the instant unsaturated hydroxyl monomers are taught to be the preferred comonomer by patentees (col. 15,

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line 58 to col. 16, line 3; lines 30-34). Aqueous free-radical solution polymerization process is expressly taught, and chain transfer agent is further suggested (col. 16, lines 37-65; col. 17, lines 43-55). Crosslinking agents are disclosed (col. 17, line 56 to col. 18, line 7). Prior art binder composition has utility in producing articles from fibrous material, including inorganic and mineral fibers (i.e. glass fibers) (col. 23, lines 1-16). Prior art discussed contain aqueous binder composition, comprising the instant adduct within the scope of addition polymer (2), having utility in making glass fiber products as presently claimed. Accordingly, it would have been obvious to one skilled in the art to select the ethylenically unsaturated acid monomer and comonomers suggested and copolymerize them in aqueous solution as taught to formulate the addition polymer (2), motivated by the reasonable expectation of success in producing glass fiber products. Thus, rendering obvious the present claims.

#### ***Response to Arguments***

Applicant's arguments filed 10/17/06 have been fully considered but they are not found to be persuasive. The crux of applicant's argument lies in US-658 is directed to a latex and thus the polymer is not water-soluble. The examiner disagrees.

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While prior art prefers and exemplifies latex product using emulsion polymerization, the reference also disclose solution polymerization using polar solvent, which clearly fall within the scope of the instant aqueous solution polymerization. The polymer resulting from aqueous solution polymerization can be water-soluble because prior art teaches monomer proportions in the present range. Irrespective of the presence of (meth)acrylonitrile in prior art polymer, the resultant polymer can still be water-soluble because only as little as 1 wt% of (meth)acrylonitrile is required to be present (see abstract. Regarding, the Renk (US-464) reference, the examiner is of the position that the instant claims do not preclude prior art alkanolamine component (1), the instant adduct still fall within the scope of prior art polymer (2). Suitable COOH:OH molar ratio in prior art polymer(2) is within the range from 20:1 to 1:5, which clearly encompass the instant range (col. 19, line 1). Accordingly, the examiner's position is maintained.

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

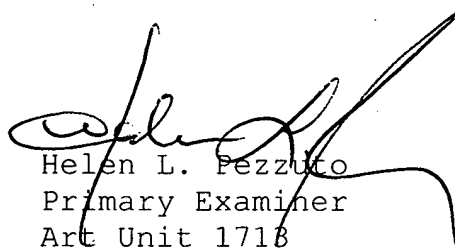
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Helen L. Pezzuto whose telephone number is (571) 272-1108. The examiner can normally be reached on 8 AM to 4 PM, Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Helen L. Pezzuto  
Primary Examiner  
Art Unit 1713

hlp